CLAIMS

What is claimed is:

1. Connector assembly for connecting and aligning an active optical component with an optical waveguide, the assembly comprising:

(i) a waveguide chip having an optical waveguide embedded beneath a cladding layer and a cavity for accommodating the active optical component delineated by at least one wall extending from the surface of the cladding layer through the waveguide; and

(ii) a second chip for carrying the active optical component,

wherein the waveguide chip comprises a locating stop and the second chip has first and second reference regions formed thereon, the first reference region being adapted to locate the active optical component, and the second reference region being adapted to engage the surface of the cladding layer and the locating stop of the waveguide chip when the waveguide chip and second chip are connected together with the active optical component located within the cavity in order to provide alignment of the waveguide with the active optical component.

2. Connector assembly according to claim 1, wherein the locating stop is formed on the cladding layer of the waveguide chip.

3. Connector assembly according to claim 1 or 2, wherein the cladding layer of the waveguide chip and the second reference region of the second chip comprise planar surfaces.

4. Connector assembly according to claim 3, wherein the first reference region of the second chip comprises a locating edge formed on the planar surface.

5. Connector assembly according to any preceding claim, further comprising an active optical component mounted and glued or soldered in place on the second chip.

6. Connector assembly according to claim 5, wherein the waveguide chip and the second chip are glued or soldered together.

7. Method of connecting and aligning an active optical component with an optical waveguide embedded within a waveguide chip beneath a cladding layer, the method comprising the steps of:

(i) Forming a cavity in the waveguide chip extending from the surface of the cladding layer through the optical waveguide for accommodating the active optical component;

(ii) providing a locating stop on the waveguide chip;

(iii) forming first and second reference regions on a second chip, the first reference region being adapted to locate the active component, and the second reference region being adapted to engage the surface of the cladding layer and the locating stop;

(iv) mounting the active optical component on the second chip;

(v) connecting the second chip to the waveguide chip such that the second reference region engages the surface of the cladding layer and the locating stop such that the active optical component is located in the cavity and in alignment with the waveguide.

8. Method according to claim 7, wherein the cavity is formed in the waveguide chip by precision milling or deep etching.